

WHAT IS CLAIMED IS:

1. A receiver, comprising:  
  
a plurality of averaged waveforms, each said averaged waveform comprising an average of a plurality of FQPSK-B waveforms; and  
  
a plurality of correlators, using a trellis code to correlate an input signal with each of said averaged waveforms of said plurality.
2. A receiver as in claim 1, wherein said plurality of averaged waveforms each represent four FQPSK-B waveforms.
3. A receiver as in claim 1, further comprising an input filter which filters an input signal.
4. A receiver as in claim 1, further comprising a demodulator, receiving an input signal, and producing demodulated signals.
5. A receiver as in claim 4, wherein said demodulated signals include an in phase signal and a quadrature signal.

6. A receiver as in claim 2, wherein there are four of said correlators to demodulate said FQPSK-B waveforms.

7. A receiver as in claim 1, wherein said plurality of averaged waveforms include a plurality of basic FQPSK-B waveforms which have similar characteristics.

8. A receiver as in claim 7, wherein each averaged waveforms comprise a combination of four FQPSK-B waveforms.

9. A method, comprising:

obtaining a plurality of basic waveforms which represent trellis waveforms for FQPSK-B;

averaging groups of said plurality of waveforms to form averaged waveforms, wherein a number of said averaged waveforms is less than a number of said plurality of waveforms; and

correlating an FQPSK-B input signal against said averaged waveforms to demodulate said input signal.

10. A method as in claim 9, wherein said averaging groups comprises averaging four of said FQPSK-B waveforms to form each averaged waveform.

11. A method as in claim 9, further comprising filtering an input signal, and wherein said correlating comprises correlating against a filtered input signal.

12. A method as in claim 9, further comprising producing demodulated signals from input signals.

13. A method as in claim 12, wherein said demodulated signals include an in phase signal and a quadrature signal.

14. A method as in claim 9, wherein said correlating comprises using four of said correlators to demodulate said FQPSK-B waveforms.

15. A method as in claim 9, wherein said plurality of averaged waveforms include a plurality of waveforms which have similar characteristics.

16. A method as in claim 9, wherein each averaged waveforms comprise a combination of four FQPSK waveforms.

17. A receiver, comprising:  
a filter element, receiving an input FQPSK-B signal and producing a filtered FQPSK-B signal; and

a Viterbi Algorithm receiver, producing demodulated signals based on said FQPSK-B input signals.

18. A receiver as in claim 17, wherein said Viterbi Algorithm receiver compares said filtered FQPSK-B signal with a plurality of averaged signals.

19. A method of receiving an FQPSK-B signal, comprising:

obtaining a plurality of basic FQPSK-B signals associated with modulation of an FQPSK-B signal;

averaging said plurality of basic FQPSK-B signals to form a plurality of averaged signals; and

comparing an input coded FQPSK-B signal with said plurality of averaged signals to carry out the modulation.

20. A method as in claim 19, wherein there are 16 of said basic FQPSK -B signals, and wherein there are four of said averaged signals.